

CAREBEARBOOKS TECHNICAL ASSIGNMENT

OBJECTIVE

Build a web-based payroll calculator that integrates with Google Sheets as the data engine. The calculator must replicate the exact functionality shown in the provided CSV document.

TECHNICAL REQUIREMENTS

1. APPLICATION STRUCTURE

Create a three-step web interface:

- **Header:** "ABC Company"
- **Step 1:** Employee Information Input
- **Step 2:** Employee Wage Calculator
- **Step 3:** Employee Cost Breakdown

2. GOOGLE SHEETS INTEGRATION (CRITICAL REQUIREMENT)

- **Data Engine:** Google Sheets must serve as the calculation engine and data storage
- **Bidirectional Sync:**
 - All user inputs from the web interface must write to Google Sheets in real-time
 - Any formula changes in Google Sheets must immediately update the web interface
 - The web interface must read calculated values from Google Sheets, not perform calculations locally
- **API Integration:** Use Google Sheets API v4 for all data operations

3. FUNCTIONAL SPECIFICATIONS

Step 2 - Wage Calculator Must Calculate:

- Daily Pay

- Weekly Pay
- Monthly Wage
- Annual Pay
- Based on inputs: Hourly Rate, Hours per day, Days per week, Weeks per year

Step 3 - Cost Breakdown Must Calculate These Deductions:

- Social Security: 6.2%
- Medicare: 1.45%
- WA PFML: 0.5794%
- WA Cares: 0.58%
- Federal Income Tax: (user input)
- L.N.I (Workers Comp): 0.7963%
- Display: Total Deductions, Net Pay, Net Take-Home Pay

4. DATA FLOW REQUIREMENTS

- User enters data in web interface → Data writes to Google Sheets → Google Sheets calculates → Results display in web interface
- If formulas are modified in Google Sheets → Web interface must reflect changes without page refresh
- Implement real-time synchronization using Google Sheets API webhooks or polling

5. TECHNICAL IMPLEMENTATION

- **Authentication:** Implement Google OAuth2 for Sheets access
- **Error Handling:** Handle API rate limits, network failures, and permission errors
- **Performance:** Implement efficient data polling or webhook listening
- **Data Validation:** Validate inputs before writing to sheets

DELIVERABLES

1. **Working web application** with Google Sheets integration
2. **Google Sheet template** with proper formulas and structure
3. **Source code** with clear documentation
4. **Setup instructions** including Google API configuration

5. Demonstration showing:

- Data entry from web interface appearing in Google Sheets
 - Formula modification in Google Sheets updating web interface
 - Real-time synchronization working
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SUCCESS CRITERIA

- Web interface accurately replicates CSV document calculations
 - Google Sheets serves as the single source of truth for all data and calculations
 - Changes in either system (web or sheets) reflect in the other within 5 seconds
 - All calculations match the provided CSV document exactly
 - System handles multiple concurrent users
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TECHNICAL CONSTRAINTS

- Must use Google Sheets API v4
 - No local calculations - all math must happen in Google Sheets
 - Must handle Google API authentication properly
 - Must implement proper error handling for API failures
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TIMELINE

7 days

KEY TEST

We will modify formulas in your Google Sheet during evaluation to verify real-time synchronization works correctly.

Candidate Name: _____

Assignment Date: _____

Due Date: _____